

REMARKS

The application was filed with claims 1-25. Claims 8-11, 13-14 and 23 were withdrawn from consideration. Note that claim 8 and claims 9, 10 and 11 and claims 13, 14 and 23 depend directly or indirectly on claim 8. Claim 8 was originally filed to depend on claims 1-7 and by Preliminary Amendment was amended to depend on claim 1. Claim 8 now depends on claim 2 and claims 9-11, 13-14 and 23 depend directly or indirectly on claim 8 which itself depends on claim 2. Note that claims 8-11, 13-14 and 23 were withdrawn by the present action. Certain claims among 8-11, 13-14 and 23 are amended herewith and therefore, contain the status identifier withdrawn-currently amended. Claim 24 is amended herewith to correct an obvious typographical error. It is respectfully submitted that such claims which now depend directly or indirectly on claim 2 which is submitted to be in condition for allowance, should be permitted to issue along with examined and now allowable claims 2, 4, 18-22, 24 and 25.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperry (US 3,765,877). This rejection is respectfully traversed.

Claims 2, 4, 5, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperry in view of Rogers (US 5,484,492). This rejection is respectfully traversed.

Claims 12, 16, 17, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperry and Rogers and in further view of Ichinose et al (US 5,993,576). This rejection is respectfully traversed.

Claims 1, 3, 5 to 7, 12, and 15 to 17 have been cancelled. Claims 2, 4, 8 to 11, 13, 14, and 18-25 are in the case. Claim 2 is independent. Claims 4, 8 to 11, 13, 14, and 18-25 depend directly or indirectly on claim 2.

Claim 2 defines

a high strength aluminum alloy casting obtained by casting an aluminum alloy comprised of 7.5 to 11.5 wt% of Si, 3.8 to 4.8 wt% of Cu, 0.45 to 0.65 wt% of Mg, 0.4 to 0.7 wt% of Fe, 0.35 to 0.45 wt% of Mn, and the balance of Al and not more than 0.2 wt% of unavoidable impurities, wherein this aluminum alloy contains 0.1 to 1.0 wt% of at least one element selected from the group of second additive elements comprised of Rb, K, Ba, Sr, Zr, Nb, Ta, V, and Pd and rare earth elements.

Note importantly that in order to achieve a proper silicon grain size and proper silicon distribution, the present invention caps the amount of silicon at 11.5 percent and does not require the presence of titanium. This is different from both Rogers and Sperry.

It is noted that the Sperry reference describes an alloy having a silicon content (Si) of 7-20%. Sperry mentions that such silicon content alloys are generally in two categories low silicon having 7 and not more than 12% Si, and high silicon content having over 12% Si. Sperry teaches that 7-12 is preferred on the basis that suitable silicon grain size is achieved. In contrast, greater than 12% Si alloy has coarse silicon grain size.

Rogers is different from Sperry because Rogers has a silicon content 12-15% and relies on the presence of 1-3% titanium to promote Si dispersion and control Si grain size.

In order to achieve a proper silicon grain size and proper silicon distribution, the present invention caps the amount of silicon at 11.5% and does not require the presence of titanium. This is different from both Rogers and Sperry.

It should be noted that Rogers takes a different approach than the present invention and a different approach from Sperry. In this regard, Sperry and Rogers are not combinable. Therefore, Claim 2 is patentable over Sperry and Rogers, at least because the Examiner had not made a case for rejection of Claim 2 on the basis of Sperry and Rogers and at least because Sperry and Rogers are not combinable.

Note that the present invention is directed to an important feature, where a rare earth element is included in the

composition. Such rare element is present to form a hydride with gaseous hydrogen, thereby avoiding casting defects and minimizing the amount of evolved gas. It is important to understand this important aspect of the invention.

We note that the Rogers reference indicates the requirement that nickel must be present in the Rogers composition whereas Sperry does not use nickel. Silver is used in the Sperry composition but is not included in the Rogers composition. This is further evidence of the lack of combinability since neither Rogers nor Sperry makes a suggestion to make the necessary substitutions, deletions or additions. We also note, although Rogers mentions Lanthanide and Actinide series, they are merely mentioned as alternatives to other optional elements and as described at column 10 of Rogers. However, column 6 of Rogers teaches that "Lanthanide and Actinide series generally are precluded..."

The unique combination of elements of the present claim 2 leads to the important advantage of reduced gas formation and the formation of the hydride. The prior art does not suggest the combination, its desirability or its advantages.

Accordingly, it is respectfully submitted that claims 2, 4, 8 to 11, 13, 14, and 18-25 are patentable over the applied art and it is respectfully requested that claims 2, 4, 18-22, 24 and 25 examined in the Office Action be allowed to issue along with

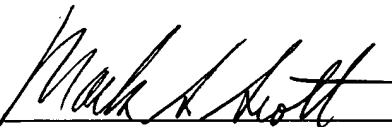
withdrawn claims 8-11, 13-14 and 23 as amended herewith to depend directly or indirectly on allowable claim 2.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: 8-24-06

By: 
Linda M. Deschere
Reg. No. 34,811

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

Mark S. Scott
Reg. No. 43,101

LDES/mm